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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,505	04/06/2001	Elliott P. Dawson	12056-2	7931

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EXAMINER
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TRAN, MY CHAU T

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/827,505	DAWSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	MY-CHAU T TRAN	1639	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-16,18,19,21-24,28 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 and 35-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-16,18,19 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Status of Claims***

1. Applicant's amendment filed 7/9/04 is acknowledged and entered.
2. Claims 29-34 were canceled, Claims 11, and 18 have been amended, and Claims 35-38 have been added by the amendment filed on 11/24/03 and 12/17/03.
3. Claim 17 is canceled by the amendment filed on 9/10/03.
4. Claims 20, and 25-27 are canceled by the amendment filed on 6/12/03.
5. Claims 1-10 are canceled by the amendment filed on 12/10/02.
6. Claims 11-16, 18-19, 21-24, 28, 35-38 are pending.

***Priority***

7. This application is a continuation of 09/145,140 filed 8/28/1998, which is a divisional of 08/927,974 filed 9/11/1997.

***Election/Restrictions***

8. Applicant has elected the following species for the elected invention (Claims 11-16, 18-19, 21-24, 28, 35-38) in the reply filed on 12/10/02:
  - i. Species E (type of cutting device): a microtome, claim 12.

- ii. Species F (type of target-strands): a target substance embedded in a porous rod, claim 13.
- iii. Species G (type of bundle of target-strands): proteins, claim 14.
- iv. Species H ("stabilizing" material): epoxy, claim 18.
- v. Species I (type of "incorporated" material): secondary enzyme, claim 28.

9. Claims 21-24, and 35-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to *nonelected species*, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/10/02.

10. Claims 11-16, 18-19, and 28 are treated on the merit in this Office Action.

11. Upon further consideration of the Stimpson (US Patent 6,037,186) and new prior art, the following new grounds of rejection are made as follows. Therefore, this Office action is a non-final rejection and the examiner regrets for any inconvenience this may have caused.

#### ***Withdrawn Rejection***

12. The rejection of claims 11-16, 18-19, and 28 under 35 USC 103(a) as being obvious over Stimpson (US Patent 6,037,186) and Toms et al. (US Patent 5,787,572) has been withdrawn and applicant's arguments has been considered but are moot in view of the new grounds of rejection.

*New Rejections*

*Claim Rejections - 35 USC § 102*

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

14. Claims 11-16, 19, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by the Stimpson (US Patent 6,037,186; *filing date 7/16/1997*).

*The presently claim 11 recites a method of producing high density arrays of target substances. The method comprises the step of sectioning a bundle of target-strands that has been stabilized by embedding the bundle in a matrix. The target-strands comprise the target substances that are located within the bundle and are noted in a database. The sectioning step results in a high density arrays. It is noted that the term "matrix" as define by the specification as either a "a material in which target substances can be embedded or to which target substances can be attached to supply additional structural support" (see pg. 5, lines 22-23) or a*

*material in which the bundle of target-strands are embedded for stabilization (see pg. 8, lines 10-16). Thus the broadest interpretation is being applied to the term "matrix".*

Stimpson teaches a method to produce arrays of compounds (see e.g. Abstract; col. 1, 6-14; col. 3, lines 30-54; col. 4, lines 22-34). Two formats of producing the arrays of compounds are described. In one format the compounds (refers to the instant claimed target substances) of the array are immobilized to porous rod elements (refers to the instant claimed target-strands) and a bundle is formed by radial compression of the rods (refers to the instant claim 13) (see e.g. col. 3, lines 47-51; col. 4, lines 7-11). The compounds include biological compounds such as nucleic acid and proteins (refers to the instant claim 14) (see e.g. col. 3, lines 47-51; col. 7, lines 19-26). A sheath (refers to the instant claimed matrix) is applied to the bundle and the arrays are cut as slabs resulting in a high density array (refers to the instant claimed sectioning step) (see e.g. col. 8, lines 7-13; col. 9, lines 13-17; col. 12, lines 11-41). The reference sheath includes an adhesive compound. The reference teaches the important features use in selecting suitable adhesive for applying a sheath to the bundle (see e.g. col. 5, lines 56-64). The reference adhesive compound is a binding substance and encompasses the broadest interpretation of the term "matrix" of the instant claim (see e.g. col. 5, line 48 to col. 6, line 7; col. 8, lines 7-13). The location of the rods and array elements are noted by "marking" the rods (see e.g. col. 10, lines 58-60; col. 11, lines 18-31). The sectioning is performed by either a microtome device or laser (refers to claim 12) (see e.g. col. 12, lines 12-17 and lines 42-54). The thickness of the cut slabs is in the range of 0.2-1 mm thick (refers to claims 15 and 16) (see e.g. col. 9, lines 13-17; col. 12, lines 11-14). The array elements can be labels with either direct or direct labeling with enzymes

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(col. 11, lines 46-59) (refers to claims 19 and 28). Therefore, the method of Stimpson is anticipated the presently claimed invention.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 11-16, 18-19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Stimpson (US Patent 6,037,186) and Runge (US Patent 4,084,308).

*The presently claim 11 recites a method of producing high density arrays of target substances. The method comprises the step of sectioning a bundle of target-strands that has been stabilized by embedding the bundle in a matrix. The target-strands comprise the target substances that are located within the bundle and are noted in a database. The sectioning step results in a high density arrays. It is noted that the term "matrix" as define by the specification*

*as either a "a material in which target substances can be embedded or to which target substances can be attached to supply additional structural support" (see pg. 5, lines 22-23) or a material in which the bundle of target-strands are embedded for stabilization (see pg. 8, lines 10-16). Thus the broadest interpretation is being applied to the term "matrix".*

Stimpson teaches a method to produce arrays of compounds (see e.g. Abstract; col. 1, 6-14; col. 3, lines 30-54; col. 4, lines 22-34). Two formats of producing the arrays of compounds are described. In one format the compounds (refers to the instant claimed target substances) of the array are immobilized to porous rod elements (refers to the instant claimed target-strands) and a bundle is formed by radial compression of the rods (refers to the instant claim 13) (see e.g. col. 3, lines 47-51; col. 4, lines 7-11). The compounds include biological compounds such as nucleic acid and proteins (refers to the instant claim 14) (see e.g. col. 3, lines 47-51; col. 7, lines 19-26). A sheath (refers to the instant claimed matrix) is applied to the bundle and the arrays are cut as slabs resulting in a high density array (refers to the instant claimed sectioning step) (see e.g. col. 8, lines 7-13; col. 9, lines 13-17; col. 12, lines 11-41). The reference sheath includes an adhesive compound. The reference teaches the important features use in selecting suitable adhesive for applying a sheath to the bundle (see e.g. col. 5, lines 56-64). The reference adhesive compound is a binding substance and encompasses the broadest interpretation of the term "matrix" of the instant claim (see e.g. col. 5, line 48 to col. 6, line 7; col. 8, lines 7-13). The location of the rods and array elements are noted by "marking" the rods (see e.g. col. 10, lines 58-60; col. 11, lines 18-31). The sectioning is performed by either a microtome device or laser (refers to claim 12) (see e.g. col. 12, lines 12-17 and lines 42-54). The thickness of the cut slabs is in the range of 0.2-1 mm thick (refers to claims 15 and 16) (see e.g. col. 9, lines 13-17; col. 12,



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lines 11-14). The array elements can be labels with either direct or direct labeling with enzymes (col. 11, lines 46-59) (refers to claims 19 and 28).

The method of Stimpson differs from the presently claimed invention by failing to include using an epoxy matrix to stabilize the bundle of rods for sectioning.

Runge teaches a method of first stabilizing bundle of rods by embedding them in epoxy and then slicing the bundle (see e.g. Abstract; col. 1, lines 42-62; col. 2, lines 44-60; col. 5, lines 1-16; fig. 1-3). The method is a simple technique for slicing a bundle of rods that can be use in both hand tool and mass-production machine environments (see e.g. col. 2, lines 13-16).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use an epoxy matrix to stabilize the bundle for sectioning as taught by Runge in the method of Stimpson. One of ordinary skill in the art would have been motivated to include using an epoxy matrix to stabilize the bundle of rods for sectioning in the method of Stimpson for the advantage of providing a simple technique for slicing a bundle of rods that can be use in both hand tool and mass-production machine environments (Runge: col. 2, lines 13-16). Additionally, both Stimpson and Runge disclose stabilizing the bundle of rods for sectioning (Stimpson: col. 4, lines 28-34; Runge: col. 1, lines 42-62). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Stimpson and Runge because the type of stabilizer use such as epoxy would be considered within the purview of the cited prior art.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Mon.: 8:00-2:30; Tues.-Thurs.: 7:30-5:00; Fri.: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW WANG can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct  
September 14, 2004

  
PADMASHRI PONNALURI  
PRIMARY EXAMINER